

# (12) UK Patent Application (19) GB (11) 2 312 982 (13) A

(43) Date of A Publication 12.11.1997

(21) Application No 9609569.0

(22) Date of Filing 08.05.1996

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(51) INT CL<sup>6</sup>  
G09F 19/22

(52) UK CL (Edition O )  
G5C CDBX  
F4R RAG R34Y

(56) Documents Cited  
GB 2292631 A GB 2157470 A GB 1498483 A  
EP 0323682 A

(58) Field of Search  
UK CL (Edition O ) G5C CAC CAD CDBF CDBP CDBX  
CEJ CEP  
INT CL<sup>6</sup> F21P , G09F

## (54) Wayfinding guidance evacuation system

(57) A wayfinding guidance evacuation system is a line of apparently moving electric lights to act as a guide to persons within a building to point of safety in the event of fire or other danger. The system comprises the base switch detection unit (1), this allows the system to come into operation when the trigger detection switch (4) is operated and the pulse generator (5) passes binary codes to the signal encoder (6) which in turn passes an encoded digital signal along one of four data lines.

Each of the strobe light units (3) is preset to receive one of the codes and fires the strobe light (9). The data lines pass through an electronic gate (10) which is connected to a heat sensor (11), and upon actuation of the heat sensor (11) the gate (10) will close stopping any code passing beyond that strobe unit (3).

At the end of the line of strobe units (3) is a reverse base unit (2), monitoring the data sent out from the base switch detection unit (1) and resetting itself every time a code is received via a missing signal detector (12).

Should a heat sensor (11) operate closing down the data lines, the missing signal generator (12) can no longer reset and allows a pulse generator (13) to create an opposite binary code to the pulse generator (5) within the base switch unit (1) and passes this to the signal encoder up (14) which passes this signal back along the data lines.

The system may operate on two core 'pyro' cable (15), see Figure 3.

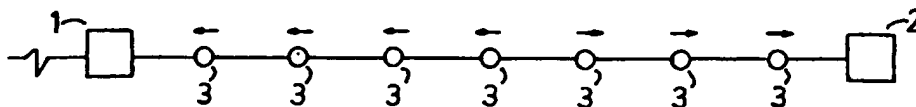


FIG 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

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FIG 1

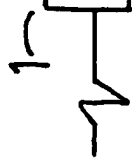
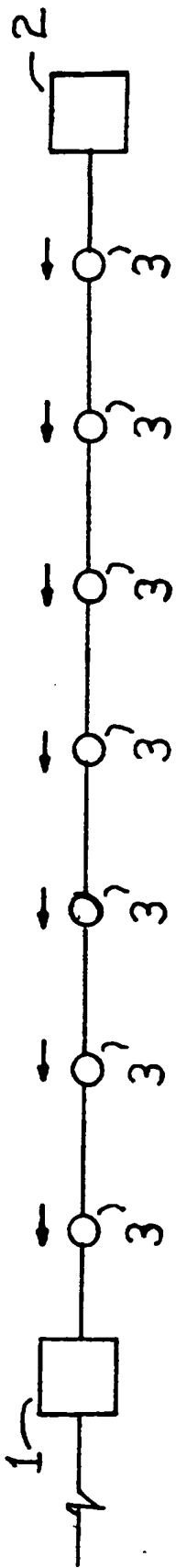
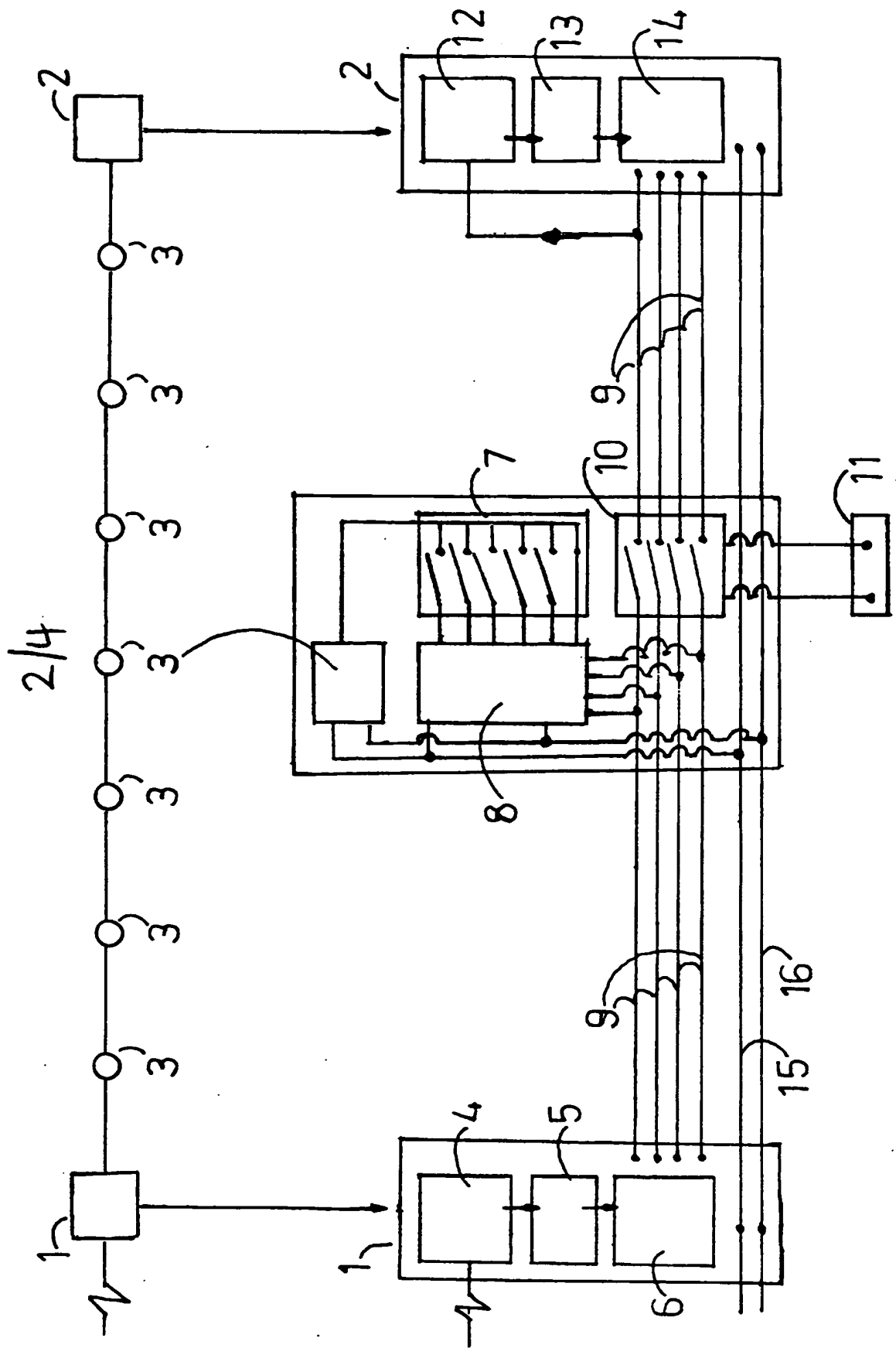
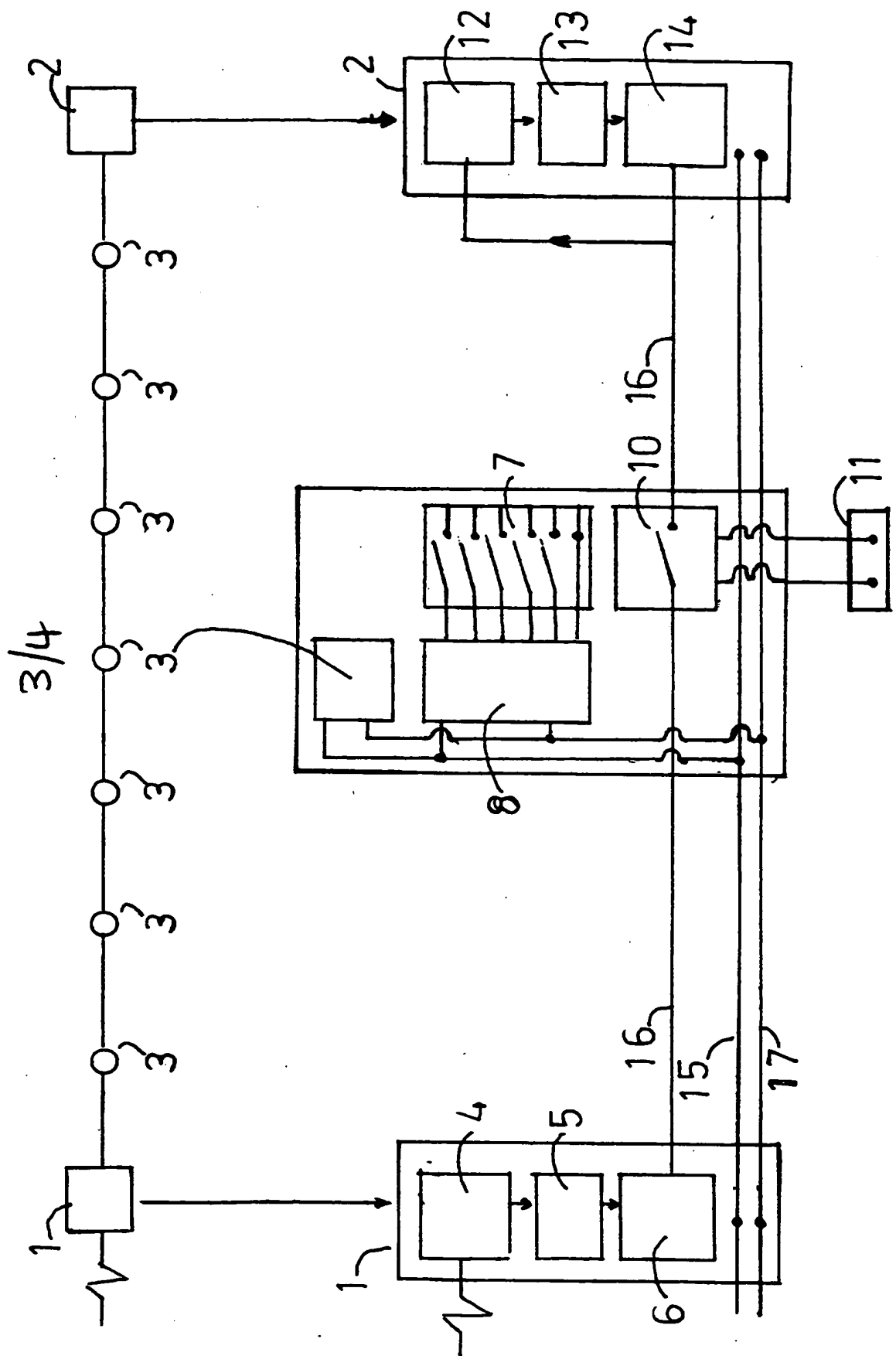
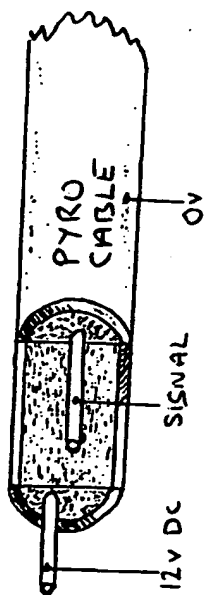


FIG 2





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**Title of Invention**

**Wayfinding Guidance Evacuation System**

The object of the equipment is to provide a system of apparently moving, high visibility, sequential moving lights; which in an emergency will guide people from a building, structure, vehicle or vessel.

The system is designed to operate manually, automatically or can be coupled to existing fire alarm systems, where, upon activation the wayfinding system will show clear routes avoiding the fire or danger zones.

The object of the wayfinding guidance system is to assist with the evacuation of buildings, structures, vehicles or vessels, by means of high visibility sequential lights giving definite apparent movement guiding occupants to points of relative safety.

The use of high visibility lights is to penetrate smoke to provide guidance to exits should the routes become smoke logged.

A signal generation provides a set of digital codes, each lamp unit is pre-programmed to accept one of these codes and, will operate upon receipt of its own signal code, overall this will give a definite path of moving lights to the appropriate exit.

This signal is permanently monitored by a second generator at the opposite end of the line. This generator will remain dormant as long as a code is received from the main generator.

Each lamp unit is capable of detecting heat and on detecting heat will close down the digital signal to prevent it being transmitted beyond that lamp, this in turn will allow the dormant signal generator to transmit the digital signal in reverse order, thus changing the direction of lights from the point of heat detection.

This will now provide movement of lights in two directions away from the point of heat detection, thereby guiding persons away from that point.

Voice modules can be incorporated into the system, to pass information to occupants to follow the movement of the lights.

Power can be supplied from electric mains via a transformer or, battery back-up in the event of mains failure.

The battery to be trickle-charged.

**LEGEND FOR DRAWINGS 1/4 - 4/4**

- 1 BASIC SWITCH UNIT
- 2 REVERSE BASE UNIT
- 3 STROBE LIGHT UNIT
- 4 TRIGGER DETECTION
- 5 PULSE GENERATOR
- 6 SIGNAL ENCODER 'DOWN'
- 7 SELECTOR SWITCH
- 8 SIGNAL DECODER CHIP
- 9 4 X DATA LINES
- 10 GATE
- 11 HEAT SENSOR
- 12 MISSING SIGNAL DETECTOR
- 13 PULSE GENERATOR
- 14 SIGNAL ENCODER 'UP'
- 15 12 VOLT CORE OF 'PYRO CABLE'
- 16 SIGNAL CORE OF 'PYRO CABLE'
- 17 OUTER COPPER SHEATH OF 'PYRO CABLE' AT 0. VOLT

**DRAWING 1/4 BASIC PRINCIPLES**

FIG 1. SHOWS MULTIPLE STROBE UNITS FLASHING IN TURN TOWARDS BASE UNIT 1 WHEN UNIT HAS BEEN TRIGGERED BY FIRE ALARM.

FIG 2. MULTIPLE STROBE UNITS NOW FLASH AWAY FROM UNIT THAT HAS BEEN SUBJECTED TO HEAT, BASE UNITS 1 & 2 ARE INSTALLED IN A PLACE OF SAFETY.

**DRAWING 2/4 DETAIL 6 CORE SYSTEM****DRAWING 3/4 DETAIL 2 CORE SYSTEM**



**CLAIMS**

1. A Wayfinding Guidance Evacuation System is a series of apparently moving electric lights to act as a guide to person or persons within a building or structure to a point of safety in the event of a fire or similar danger.
2. A Wayfinding Guidance Evacuation System is a series of apparently moving electric lights that will automatically reverse direction on detecting a source of heat and therefore guide persons away from that danger.
3. A point of safety described in claim one is the outside a building by way of exit(s).



Application No: GB 9609569.0  
Claims searched: 1 - 3

Examiner: Roger Casling  
Date of search: 7 August 1996

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): G5C(CAC,CAD,CDBF,CDBP,CDBX,CEJ,CEP)

Int CI (Ed.6): F21P,G09F

Other:

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2292631 A (GLASSPOLE) see page 6 line 5 to page 7 line 4	claims 1 and 3
X	GB 2157470 A (SMITH) see the whole document, especially page 1 line 112 to 130	claims 1 and 3
X	GB 1498483 (ESSER) see page 2 line 72 to page 3 line 21	claims 1 and 3
X	EP 0323682 A1 (HARRISON) see column 4 line 34 to 54 and column 7 line 36 to 50	claims 1 and 3

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.